



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10**

1200 Sixth Avenue, Suite 900  
Seattle, WA 98101-3140

OFFICE OF  
ENVIRONMENTAL CLEANUP

March 8, 2019

Meseret C. Ghebreslassie  
Installation Restoration Program Manager  
DPW Environmental Division IMLM-PWE  
2012 Liggett Ave  
JBLM WA 98433

Re: EPA Acknowledgment Addendum to Second Installation-Wide Five Year Review  
Report, Joint Base Lewis-McChord, September 2017

Dear Ms. Ghebreslassie:

The U.S. Environmental Protection Agency (EPA) has conducted a review of the above document. The principle issues identified in the Five-Year Review was "Determination of protectiveness is deferred, pending additional sampling to address the potential for per- and polyfluoroalkyl substances (PFAS) in groundwater at OU 1, OU 2, and OU 3 at the time the Second Five-Year Review was signed.

Based on the results of the Addendum, the protectiveness determination can be changed to "Currently Protective" for all three OU's, and the Site overall.

If you would like to discuss this, or require clarification please contact me at (206) 553-1478 or [cora.christopher@epa.gov](mailto:cora.christopher@epa.gov).

Sincerely,

**CHRISTOPHER  
CORA**

Christopher Cora  
Remedial Project Manager

Digitally signed by  
CHRISTOPHER CORA  
Date: 2019.03.08 14:36:08  
-08'00'

cc: Jason Cook, Washington Department of Ecology

**EXSUM: Addendum to Second Installation-Wide Five Year Review Report  
(03/12/2019, MESERET GHEBRESLLASSIE, IRP PM, 253-477-3742)**

**BLUF:** Addendum to Second Installation-Wide Five Year Review Report is to demonstrate human health protectiveness at both Operable Unit 1 (OU1) and Operable Unit 3 (OU3) and Perfluorinated Alkyl Substances (PFAS) in groundwater samples result below the EPA lifetime health advisory level (HAL) of 70 parts per trillion (ppt) for the sum of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). A Second Installation-Wide Five Year Review Report signed by Colonel, Nicole M. Lucas on November 14, 2017. Human health protectiveness was deferred by the EPA for OU 1 and OU3. The EPA factored recent discovery PFAS in JBLM drinking water into the Superfund Site five year review. The EPA believes that the pump and treat components of the OU1 - Logistics Center and OU3 – American Lake Garden Trace remedies have potential to intercept groundwater containing PFASs. Five Year Review evaluation of the remedies at JBLM Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites to continue to protect human health and the environment, as required by Federal Law.

**DISCUSSION:**

This Addendum demonstrate that human health protectiveness at both OU1 and OU3 and the PFAS result below the EPA lifetime health advisory level (HAL) of 70 parts per trillion (ppt) for the sum of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA).

**POTENTIAL IMPACT TO JBLM:** Violation of federal 40 Code of Federal Regulations § 300.430(f)(4)(ii) *"If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the sites above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action."*

**RECOMMENDATION:** The JBGC Sign the Addendum to The Second Installation-Wide Five Year Review Report.

Subject	Addendum to The Second Installation-Wide Five Year Review Report
Purpose	Evaluation of the remedies of CERCLA sites are and will continue to be protective of human health and the environment
Discussion, Issues, Concerns	See attached ExSum. Yellow Tab: Memorandum; Blue Tab 1: JBLM Preliminary Phase 1 PFAS Sampling Result Summary Table; Blue Tab 2: Letter from EPA

Recommendation	JBGC Approve and Sign Memorandum
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[illegible]

ID: 6482

RCVD:

27-Mar-19

FROM: DPW

SUBJECT: Addendum to the Second Installation-Wide Five Year Review Report

EXEC ASS

MAR 20 2019

COS:

CSM:

DJBC:

JBC:

ADMIN:

DCOS:

SEA:

MAR 27 2019

☐ SIGNED AND READY FOR PICKUP

RETURNED TO:

OUT:

☐ NEEDS CORRECTIONS

DP

NWD  
27 MAR 2019



DEPARTMENT OF THE ARMY  
JOINT BASE GARRISON HEADQUARTERS, JOINT BASE LEWIS-MCCHORD  
1010 LIGGETT AVENUE, BOX 339500, MAIL STOP 1AA  
JOINT BASE LEWIS-MCCHORD, WA 98433-9500

IMLM-PWE

MEMORANDUM FOR RECORD

SUBJECT: Addendum to Second Installation-Wide Five Year Review Report, Joint Base Lewis-McChord, September 2017

1. A Five-Year Review addendum is generally completed for remedies where the protectiveness determination is deferred until further information is obtained. When deferring protectiveness in the Five-Year Review report, Environmental Protection Agency (EPA) typically provides a timeframe for when the information will be obtained and a protectiveness statement can be made. This document provides progress since the Five-Year Review and protectiveness determinations for the remedies where the statement was deferred in the September 2017 Five-Year Review. The Five-Year Review report (Report) for Joint Base Lewis-McChord in Pierce County, Washington, was signed by Colonel Nicole M. Lucas on November 14, 2017. The protectiveness statements outlined in the Report were as follows:

a. Operable Unit (OU) 1 - Logistics Center Remedy: A protectiveness determination for the OU1 – Logistics Center Remedy cannot be made at this time until further information is obtained. Further information will be obtained by taking the following action: an investigation and evaluation of the presence of per- and polyfluoroalkyl substances (PFASs) within the three pump and treat systems at the Logistics Center. It is expected that this action will take approximately three years to complete, at which time a protectiveness determination will be made.

b. Operable Unit 3 – American Lake Garden Trace (ALGT): A protectiveness determination for the OU3 – ALGT remedy cannot be made at this time until further information is obtained. Further information will be obtained by taking the following action: an investigation and evaluation of the presence of PFASs within the Pump&Treat system at the ALGT. It is expected that this action will take approximately three years to complete, at which time a protectiveness determination will be made.

2. Progress Since the Five-Year Review Completion Date: This addendum addresses the Protectiveness Statements for OU 1 – Logistics Center Remedy - and OU 3 – ALGT. The unknown condition of presence or absence of (PFAS) in groundwater at both OU 1 and OU 3 precluded making a protectiveness determination at the time the Second Five-Year Review was signed. An installation-wide preliminary assessment/site inspection (PA/SI) began in September 2017. The PA component has been completed. Results of the PA have not been published but were delivered to the EPA during Technical Project Planning meeting number two on 14 February 2018. Phase I of the SI has also been completed. This included groundwater sampling from 40 existing monitoring wells and influent and effluent water from three OU1 pump and treat systems and was based on the PA results and the Second Five-Year Review Recommendations. The Phase I sampling locations associated with the Second Five-Year Review were:

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SUBJECT: Addendum to Second Installation-Wide Five Year Review Report, Joint Base Lewis-McChord, September 2017

a. OU1, Landfill 2 source area, groundwater sampling from two monitoring wells, specifically LC 153 and LC 230; and influent and effluent samples from the Landfill 2 treatment system, the I-5 treatment system, and the Sea Level Aquifer treatment system.

b. OU2, Landfill 1 and 4 source area, groundwater sampling from five monitoring wells, specifically 84-CD-LF1-1, 84-CD-LF1-4, LF4-01, LF4-MW-10, and LF4-PNL1.

c. OU3, ALGT Landfill 5 source area, groundwater sampling from four monitoring wells, specifically DA-7e, DA-21a, DO-2, and DO-5b. ALGT Pump and treat system has been shut down since June 2016 to evaluate monitored natural attenuation (MNA) as an alternative remedy for the site.

3. Phase I sampling results were delivered to EPA during Technical Project Planning meeting number three on 18 September 2018. These results were compared to the EPA lifetime health advisory level (HAL) of 70 parts per trillion (ppt) for the sum of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). The analytical results are summarized in the table below:

Location	PFOS (ppt)	PFOA (ppt)	PFOS + PFOA (ppt)
<b>OU1</b>			
LF-2 source area MW LC153	0.53 U	0.73 J	0.73 J
LF-2 source area MW LC230	0.54 U	0.38 J	0.38 J
LF-2 P&T Influent	9.1	9.9	19
LF-2 P&T Effluent	0.53 U	0.36 J	0.36 J
I-5 P&T Influent	29	10	39
I-5 P&T Effluent	31	10	41
SLA P&T Influent	5.7	5	10.7
SLA P&T Effluent	4.8	4.7	9.5
<b>OU2</b>			
LF-1 source area 84-CD-LF1-1	1.4 J	0.27 J	1.67 J
LF-1 source area 84-CD-LF1-4	0.85 J	0.37 J	1.22 J
LF-4 source area LF4-01	5.3	5.9	11.2
LF-4 source area LF4-MW-10	4	2.3 J	6.3 J
LF-4 source area LF4-PNL1	3.6	2.7	6.3
<b>OU3</b>			
ALGT LF-5 source area DA-7e	1.5 U	0.74 U	ND
ALGT LF-5 source area DA-21a	20	2.9	22.9
ALGT LF-5 source area DO-2	17	4	21
ALGT LF-5 source area DO-5b	38	5.6	43.6

Notes:

J – Estimated value

U – Analyte None of these results exceed the 70 ppt HAL for PFOS/PFOA.  
was not detected above the practical quantitation limit shown

4. Issues and Recommendations. Based on these results, it is recommended that the protectiveness statements for Operable Unit 1 - Logistics Center Remedy and Operable Unit 1 – ALGT be revised from “deferred” to “protective.”

5. Protectiveness Statements:

a. OU1 – Logistics Center Remedy: Based on new information and/or actions taken since the Five-Year Review completion date, the protectiveness statement for OU1 – Logistics Center Remedy is being revised to currently protective of human health and the environment because the sum of PFOS/PFOA was found to be below the current HAL of 70 ppt in the Landfill 2 source area wells and Landfill 2, I-5, and Sea Level Aquifer pump and treat system influent and effluent samples.

b. OU3 – ALGT: Based on new information and/or actions taken since the Five-Year Review completion date, the protectiveness statement for OU3 - ALGT is currently protective of human health and the environment because the sum of PFOS/PFOA was found to be below the current HAL of 70 ppt in samples collected from wells DA-21a, DA-7e, DO-2, and DO 5b, which are located within or downgradient of Landfill 5.

6. Overall Protectiveness Statement: The remedial action at OUs 1, 2, and 3 currently protect human health and the environment. For the remedy at the SRCPP (OU2) to be protective in the long-term, the prevention of residential land use needs to be incorporated into the JBLM LUC Plan and annual inspection checklists to ensure protectiveness.

7. The next five-year review will be completed on September 30, 2022.

8. The point of contact for this action is Meseret Ghebreslassie, 253-477-3742, email, meseret.c.ghebreslassie.civ@mail.mil.



NICOLE M. LUCAS  
COL, LG  
Commanding

Encl

Preliminary UNVALIDATED Results

Analytical Results for Per- and Poly-Fluoroalkyl Substances in Groundwater and Surface Water

Joint Base Lewis-McChord Public Works Environmental Division Site Inspection

U.S. Army Corps of Engineers, Seattle District

Potential Area of Concern				Figure Reference	Per- and Poly-Fluoroalkyl Substances (ng/L)														Sum of 6 UCMR PFAS
Well ID	Nearest Drinking Water Well	Date Collected	Project Action Limit <sup>1</sup> :	NE#FOSAA NE	NMeFOSAA NE	PFBS 400,000 <sup>2</sup>	PFDA NE	PFDoA NE	PFHpA NE	PFHxS NE	PFHxA NE	PFNA NE	PFOS 70 <sup>3</sup>	PFOA 70 <sup>3</sup>	PFTA NE	PFTtDA NE	PFUnA NE	PFAS 70	
Clover Creek																			114.81
CW-62	North Well	17-3	6/19/2018	0.88 U	0.88 U	9.2	0.88 U	0.26 U	4.5	33	7.1	0.71 J	60	7.4	0.53 U	0.53 U	0.35 U	114.81	
Clover Creek and McChord Hangars																			78.50
CW-64	North Well	17-2, 17-3	6/19/2018	0.86 U	0.86 U	4.1	0.86 U	0.26 U	6.4	9.6	5.8	1.4 J	34	23	0.51 U	0.51 U	0.34 U	78.50	
IW-2	North Well	17-2, 17-3	6/8/2018	0.91 U	0.91 U	23	0.91 U	0.27 U	2.0	8.7	2.3 J	0.36 U	3.1	5.7	0.54 U	0.54 U	0.36 U	42.86	
FT029																			40.37
CW-12	East Well	17-5	6/7/2018	1.7 U	1.7 U	3.9	1.7 U	0.50 U	0.50 U	4.2	1.7 U	0.67 U	24	7.1	1.0 U	1.0 U	0.67 U	40.37	
FT032																			22089.00
FTA-4a	East Well	17-6	6/7/2018	9.1 U	9.1 U	81	9.1 U	2.7 U	290	2,000	390	88	19,000	630	5.5 U	5.5 U	3.6 U	22089.00	
FTA-4b	East Well	17-6	6/7/2018	9.1 U	9.1 U	630	33	2.7 U	650	5,900	1,700	590	28,000	1,400	5.5 U	5.5 U	13 J	37170.00	
Historic waterseeping, bunde																			169.30
01035-MW01	Well 17	17-12	6/18/2018	0.88 U	0.88 U	5.7	0.88 U	0.26 U	12	40	31	3.6	82	26	0.53 U	0.53 U	0.35 U	169.30	
4131-MW04	Well 17	17-12	6/18/2018	0.88 U	0.88 U	4.6	0.88 U	0.27 U	5.3	15	6.1	1.4 J	23	12	0.53 U	0.53 U	0.35 U	61.30	
		6/18/2018 (DUP)	0.90 U	0.90 U	4.5	0.90 U	0.27 U	4.8	15	5.9	1.2 J	22	11	0.54 U	0.54 U	0.36 U	58.50		
Landfill #1/Gray Field Hangars/SWMU 47																			4.78
84-CD-LF1-1	Well 14	17-10	6/26/2018	0.87 U	0.87 U	0.80 J	0.87 U	0.26 U	0.26 U	1.7 J	0.87 U	0.35 U	1.4 J	0.27 J	0.52 U	0.52 U	0.35 U	4.78	
84-CD-LF1-4	Well 14	17-10	6/26/2018	0.89 U	0.89 U	0.36 J	0.89 U	0.27 U	0.27 U	1.2 J	0.89 U	0.36 U	0.85 J	0.37 J	0.54 U	0.54 U	0.36 U	3.41	
Landfill #2																			65.36
I-1 P&T Effluent	MAMC-04	17-11	6/18/2018	0.86 U	0.86 U	2.1	0.86 U	0.26 U	1.7	20	4.1	0.56 J	31	10	0.51 U	0.51 U	0.34 U	65.36	
I-1 P&T Influent	MAMC-04	17-11	6/18/2018	0.87 U	0.87 U	2.1	0.87 U	0.26 U	1.7 J	20	3.9	0.52 J	29	10	0.52 U	0.52 U	0.35 U	63.32	
LC-153	MAMC-04/Sage Well II	17-9	6/26/2018	0.88 U	0.88 U	0.26 U	0.88 U	0.26 U	0.35 U	0.88 U	0.35 U	0.53 U	0.73 J	0.53 U	0.53 U	0.35 U	2.48		
LC-230	MAMC-04/Sage Well II	17-9	6/15/2018	0.90 U	0.90 U	3.0	0.90 U	0.27 U	0.66 J	4.6	6.4	0.36 U	0.54 U	0.38 J	0.54 U	0.54 U	0.36 U	9.54	
LF-2 P&T Effluent	MAMC-04	17-9	6/18/2018	0.88 U	0.88 U	0.26 U	0.88 U	0.26 U	0.35 U	0.59 J	0.88 U	0.35 U	0.53 U	0.36 J	0.53 U	0.53 U	0.35 U	2.35	
LF-2 P&T Influent	MAMC-04	17-9	6/18/2018	0.85 U	0.85 U	1.0 J	5.6	0.27 J	1.6 J	3.9	2.8	3.0	9.1	9.9	0.51 U	0.51 U	2.1	28.50	
SLA P&T Effluent	MAMC-04	17-11	6/18/2018	0.85 U	0.85 U	0.74 J	0.85 U	0.26 U	0.42 J	4.1	1.1 J	0.34 U	4.8	4.7	0.51 U	0.51 U	0.34 U	15.10	
SLA P&T Influent	MAMC-04	17-11	6/18/2018	0.88 U	0.88 U	0.80 J	0.88 U	0.26 U	0.48 J	4.4	1.2 J	0.35 U	5.7	5.0	0.53 U	0.53 U	0.35 U	16.73	
Landfill #4																			19.28
LF4-01	Squalinew Springs/Well 12B	17-13	6/20/2018	0.91 U	0.91 U	3.5	0.91 U	0.27 U	0.32 J	3.9	0.91 U	0.36 U	5.3	5.9	0.54 U	0.54 U	0.36 U	19.28	
LF4-MW-10	Squalinew Springs/Well 12B	17-13	6/20/2018	1.3 U	1.3 U	3.7	1.3 U	0.38 U	0.38 U	3.0	1.3 U	0.50 U	4.0	2.3 J	0.75 U	0.75 U	0.50 U	13.88	
LF4-PNL1	Squalinew Springs/Well 12B	17-13	6/26/2018	0.90 U	0.90 U	2.4	0.90 U	0.27 U	0.34 J	3.1	0.90 U	0.36 U	3.6	2.7	0.54 U	0.54 U	0.36 U	12.50	
Landfill 005																			41.26
DA-21a	MARS Hill	17-8	6/14/2018	0.90 U	0.90 U	2.6	0.90 U	0.27 U	1.2 J	14	2.2 J	0.56 J	20	2.9	0.54 U	0.54 U	0.36 U	41.26	
DA-7c	MARS Hill	17-8	6/14/2018	2.5 U	2.5 U	0.74 U	2.5 U	0.74 U	0.99 U	2.5 U	0.99 U	1.5 U	0.74 U	1.5 U	0.99 U	0.99 U	ND	ND	
DO-2	Housing Well I	17-8	6/14/2018	0.91 U	0.91 U	2.9	0.91 U	0.27 U	2.2	16	4.4	0.36 U	17	4.0	0.55 U	0.55 U	0.36 U	42.46	
DO-5b	Housing Well I	17-8	6/14/2018	0.91 U	0.91 U	4.1	0.91 U	0.27 U	3.6	29	7.4	0.56 J	38	5.6	0.54 U	0.54 U	0.36 U	80.86	
Landfill 005/006																			14.68
Sage Well I	DA-4a	17-14	6/13/2018	0.90 U	0.90 U	0.68 J	0.90 U	0.27 U	0.94 J	3.7	1.9 J	0.36 U	7.1	1.9	0.54 U	0.54 U	0.36 U	14.68	
DA-4b	Sage Well I	17-14	6/13/2018	0.91 U	0.91 U	0.74 J	0.91 U	0.27 U	0.27 U	4.0	0.91 U	0.36 U	3.4	0.27 U	0.54 U	0.54 U	0.36 U	9.04	
Landfill 013																			ND
IH-1a	East Well	17-6	6/7/2018	0.91 U	0.91 U	0.27 U	0.91 U	0.27 U	0.27 U	0.36 U	0.91 U	0.36 U	0.55 U	0.27 U	0.55 U	0.55 U	0.36 U	ND	
IH-1b	East Well	17-6	6/7/2018	0.92 U	0.92 U	0.30 J	0.92 U	0.27 U	0.27 U	0.47 J	0.92 U	0.37 U	2.0 J	0.27 U	0.55 U	0.55 U	0.37 U	3.68	
IH-3b	East Well	17-6	6/12/2018	0.89 U	0.89 U	51	0.89 U	0.27 U	57	930	280	30	1,200	210	0.54 U	0.54 U	0.36 U	2478.00	
IH-3c	East Well	17-6	6/26/2018	0.85 U	0.85 U	62	0.85 U	0.26 U	70	1,000	360	21	740	760	0.51 U	0.51 U	0.34 U	2653.00	
		6/26/2018 (DUP)	0.86 U	0.86 U	61	0.86 U	0.26 U	64	1,000	340	20	720	720	0.52 U	0.52 U	0.35 U	2585.00		
Landfill 013/FT032																			24.48
CW-33c	Prime Beef Replacement Well I	17-7	6/12/2018	0.91 U	0.91 U	2.9	0.91 U	0.27 U	0.33 J	9.3	1.0 J	0.36 U	11	0.59 J	0.54 U	0.54 U	0.36 U	24.48	
McChord Hangars, Runways and Clover Creek																			122.70
CR-01	North Well	17-2	6/11/2018	0.89 U	0.89 U	5.5	1.1 J	0.27 U	6.5	45	14	1.1 J	57	7.6	0.53 U	0.53 U	0.36 U	122.70	
CW-14a	South Well	17-4	6/6/2018	0.92 U	0.92 U	10	1.5 J	0.28 U	14	54	37	1.5 J	44	16	0.55 U	0.55 U	0.37 U	139.50	
CW-14c	South Well	17-4	6/11/2018	1.7 U	1.7 U	17	1.7 U	0.50 U	17	88	27	2.0 J	200	16	1.0 U	1.0 U	0.67 U	340.00	
CW-14d	South Well	17-4	6/11/2018	0.89 U	0.89 U	9.1	0.89 U	0.27 U	6.3	42	12	0.60 J	95	6.6	0.54 U	0.54 U	0.36 U	159.60	
		6/11/2018 (DUP)	0.90 U	0.90 U	8.4	0.90 U	0.27 U	6.4	42	12	0.60 J	96	6.5	0.54 U	0.54 U	0.36 U	159.90		
CW-15c	North Well	17-4	6/6/2018	0.91 U	0.91 U	29	0.91 U	0.27 U	48	210	91	3.3	640	43	0.54 U	0.54 U	0.36 U	973.30	
CW-15d	North Well	17-4	6/6/2018	0.91 U	0.91 U	0.27 U	0.91 U	0.27 U	0.27 U	0.69 J	0.91 U	0.36 U	1.0 J	0.27 U	0.54 U	0.54 U	0.36 U	2.86	
		6/6/2018 (DUP)	0.91 U	0.91 U	0.27 U	0.91 U	0.27 U	0.27 U	0.57 J	0.91 U	0.37 U	0.85 J	0.29 J	0.55 U	0.55 U	0.37 U	2.62		
CW-29b	North Well	17-2	6/12/2018	0.90 U	0.90 U	9.5	2.8	0.27 U	7.0	65	15	1.7 J	89	11	0.54 U	0.54 U	0.36 U	183.20	
CW-4	North Well	17-3	6/19/2018	0.89 U	0.89 U	0.36 J	0.89 U	0.27 U	0.27 U	1.1 J	0.89 U	0.36 U	0.53 U	0.27 U	0.53 U	0.53 U	0.36 U	2.89	
MF-1	North Well	17-2	6/19/2018	1.7 U	1.7 U	17	2.1 J	0.50 U	49	200	96	5.2	310	37	1.0 U	1.0 U	0.67 U	618.20	
Surface Water 1	North Well	17-2	6/8/2018	0.92 U	0.92 U	4.5	0.92 U	0.27 U	1.3 J	6.2	2.6 J	0.49 J	19	4.2	0.55 U	0.55 U	0.37 U	35.69	
		6/8/2018 (DUP)	0.90 U	0.90 U	4.2	0.90 U	0.27 U	1.2 J	5.5	2.5 J	0.47 J	18	3.8	0.54 U	0.54 U	0.36 U	33.17		
North McChord Hangars and Runways																			383.00
1168-MW01	North Well	17-1	6/12/2018	0.89 U	0.89 U	3.0	6.9	0.27 U	190	56	220	13	50	71	0.54 U	0.54 U	0.36 U	383.00	
LT-4	North Well	17-1	6/13/2018	0.90 U	0.90 U	3.1	0.90 U	0.27 U	1.1 J	11	1.5 J	0.36 U	17	1.6 J	0.54 U	0.54 U	0.36 U	34.16	
SWMU 47																			21.51
98-1A-MW-08	Well 20	17-10	6/18/2018	0.87 U	0.87 U	0.26 U	0.87 U	0.26 U	1.9	2.3	1.2 J	0.35 U	15	1.7 J	0.52 U	0.52 U	0.35 U	21.51	
Statistical Summary																			50
Number of Analyses						50	50	50	50	50	50	50	50	50	50	50	50	50	
Number of Detections above reporting limit						0	0	43	7	1	37	47	35	26	44	44	0	2	48
Maximum Detection						0	0	630	33	0.27	650	5,900	1,700	590	28,000	1,400	0	13	37,170
Minimum Detection						0	0	0.3	1.1	0.27	0.32	0.47	1	0.47	0.85	0.27	0	2.1	2.35
Average Detection						0	0	25.5	7.6	0.27	41.4	253.9	105.6	30.5	1,176.2	93.3	0	7.6	1,483.9
Number of Detections with Sum of 6 UCMR PFAS Compounds Greater than 70 ppt																			18
Water Source for Drilling																			3.23
Hotwell			6/15/2018	0.90 U	0.90 U	0.38 J	0.90 U	0.27 U	0.27 U	0.65 J	0.90 U	0.36 U	1.3 J	0.27 U	0.54 U	0.54 U	0.36 U	3.23	
Field Rinstate Blanks																			ND
FRB1			6/6/2018	0.91 U	0.91 U	0.27 U	0.91 U	0.27 U	0.27 U	0.36 U									